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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,471	12/16/2003	Rajesh Chawla	SYB/0093.01	1470

31779 7590 12/28/2006

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EXAMINER	
LOVEL, KIMBERLY M	

ART UNIT	PAPER NUMBER
2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/707,471	CHAWLA ET AL.	
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Amendment filed 10 October 2006.

2. Claims 1-55 are pending. Claims 1, 22 and 40 are independent. In the Amendment filed 10 October 2006, claims 1, 12, 22, 32 and 39 were amended. This action is made Non-Final.

3. The rejections of claims 1-55 as being unpatentable over US Patent No. 6,799,182 to Bata (hereafter Bata) in view of US PGPub 2003/0126136 to Omoigui have been withdrawn.

Drawings

4. The objections to the drawings are withdrawn as necessitated by amendment.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. The rejections of claims 1-21 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter are withdrawn as necessitated by amendment.

7. Claims 21-39 and 55 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 21 and 55 claim a set of processor-executable instructions for performing the method. Processor-executable instructions are considered to be software per se.

According to MPEP 2106:

> The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.
>
> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)
>
> Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim 22 recites a system for performing operations at a database on data obtained from a remote service, the system comprising: a mapping module for creating database tables representing at least some methods of a remote service accessed through a defined interface; an invocation module for converting a database operation on a database table representing a method of the remote service into a call for invoking the method; a communication module for transmitting the call for invoking the method to the remote service, and returning result values from invoking the method to the database; and a conversion

module for converting result values received from the method into database format.

Even though claim 22 recites a system, the system can comprise entirely of software per se according to one of ordinary skill in the art.

According to MPEP 2106:

> The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.
>
> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)
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> Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claims 23-39 are dependent on the system of claim 22, and therefore are rejected on the same grounds as claim 22.

To allow for compact prosecution, the examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-55 are rejected under 35 U.S.C. 102(e) as being anticipated by US PGPub 2003/0093436 to Brown et al (hereafter Brown).

Referring to claim 1, Brown discloses a method for performing database operations on data obtained from a web service, the method comprising:

creating at least one proxy table in a database, each proxy table mapping to a method of the web service [creating a virtual table representative of the web service] (Brown: see [0062]-[0063] and [0074]);

in response to a database operation on a particular proxy table, converting the database operation into a format for invoking a particular method of the web service based upon the corresponding mapping (Brown: see [0049]);

invoking the particular method of the web service (Brown: see [0057]-[0059]);

converting results obtained from invoking the particular method into data for use at the database based upon the corresponding mapping (Brown: see [0074]); and

performing the database operation on the data at the database to generate a result set (Brown: see [0075]-[0077], lines 1-2); and

returning the result set in response to the database operation (Brown: see [0075]-[0077], lines 1-2).

Referring to claim 2, Brown discloses the method of claim 1, wherein the web service comprises a service remotely available via a network [Internet] (see [0011], lines 5-6).

Referring to claim 3, Brown discloses the method of claim 1, wherein the web service has a Web Services Description Language (WSDL) interface (Brown: see [0032], lines 1-7).

Referring to claim 4, Brown discloses the method of claim 3, wherein said creating step includes creating said at least one proxy table based upon the WSDL interface (Brown: see [0062]-[0063] and [0074]).

Referring to claim 5, Brown discloses the method of claim 3, wherein said creating step includes substeps of:

obtaining the WSDL interface from the web service (Brown: see [0032], lines 1-7); and

creating said at least one proxy table based upon the WSDL interface (see [0062]-[0063] and [0074]).

Referring to claim 6, Brown discloses the method of claim 1, wherein said creating step includes creating meta data [i.e., business name] identifying a particular method of the web service to be invoked when a database operation is received on a particular proxy table (Brown: see [0033], lines 9-12).

Referring to claim 7, Brown discloses the method of claim 1, wherein said creating step includes mapping arguments of the method [XML elements and attributes] to fields of the proxy table [column names] (Brown: see [0047]).

Referring to claim 8, Brown discloses the method of claim 1, wherein said creating step includes mapping arguments of the method [XML elements and attributes] to equivalent database data types [SQL data types] (Brown: see [0047]).

Referring to claim 9, Brown discloses the method of claim 1, wherein said creating step includes creating an object encapsulating the mapping of a web method to the database [mapping file 37] (Brown: see [0045]).

Referring to claim 10, Brown discloses the method of claim 1, wherein said creating step includes storing the mapping between said at least one proxy table and methods of the web service [mapping file 37] (Brown: see [0045]).

Referring to claim 11, Brown discloses the method of claim 10, wherein said step of converting results includes consulting the mapping for converting the

results into data for application at the database [mapping file 37] (Brown: see [0045]).

Referring to claim 12, Brown discloses the method of claim 1, wherein the database operation includes a JOIN operation and said step of performing the database operation includes joining data obtained from invoking the particular method of the web service with data stored in the database in generating the result set (Brown: see [0105]).

Referring to claim 13, Brown discloses the method of claim 1, wherein said step of converting the database operation includes binding data from the database operation to a Simple Object Access Protocol (SOAP) call for invoking the particular method of the web service (Brown: see [0029] and [0039]).

Referring to claim 14, Brown discloses the method of claim 1, wherein said step of converting the database operation includes converting data from the database operation into Extensible Markup Language (XML) format [XML document] (Brown: see [0088], lines 12-15).

Referring to claim 15, Brown discloses the method of claim 1, wherein said step of converting the database operation includes creating a Simple Object Access Protocol (SOAP) request for invoking the particular method of the web service (Brown: see [0030], lines 1-4).

Referring to claim 16, Brown discloses the method of claim 15, wherein said step of invoking the particular method includes transmitting the SOAP

request to a remote web service [service external to the database] (Brown: see [0011], lines 1-4 and [0030], lines 1-4).

Referring to claim 17, Brown discloses the method of claim 1, wherein said step of invoking the particular method includes receiving results from the web service (Brown: see [0075]-[0077]).

Referring to claim 18, Brown discloses the method of claim 1, wherein said step of converting results includes converting results received in Simple Object Access Protocol (SOAP) format (Brown: see [0030], lines 1-4).

Referring to claim 19, Brown discloses the method of claim 1, wherein said step of converting results includes converting results received in Extensible Markup Language (XML) format (Brown: see [0014]; [0026]; and Fig 2).

Referring to claim 20, Brown discloses a computer-readable medium having processor-executable instructions for performing the method of claim 1 (Brown: see [0023], lines 6-8 and [0024]).

Referring to claim 21, Brown discloses a downloadable set of processor-executable instructions for performing the method of claim 1 (Brown: see [0023], lines 6-8; [0024] and [0025], lines 3-4).

Referring to claim 22, Brown discloses a system for performing operations at a database on data obtained from a remote service, the system comprising:

a mapping module for creating database tables representing at least some methods of a remote service accessed through a defined interface [creating a virtual table representative of the web service] (Brown: see [0062]-[0063] and [0074]);

an invocation module for converting a database operation on a database table representing a method of the remote service into a call for invoking the method (Brown: see [0049] and [0057]-[0059]);

a communication module for transmitting the call for invoking the method to the remote service, and returning result values from invoking the method to the database (Brown: see [0011], lines 1-4; [0030], lines 1-4 and [0075]-[0077], lines 1-2); and

a conversion module for converting result values received from the method into database format (Brown: see [0074]).

Referring to claim 23, Brown discloses the system of claim 22, wherein the remote service comprises an application available via a network [Internet] (Brown: see [0011], lines 5-6).

Referring to claim 24, Brown discloses the system of claim 22, wherein the defined interface comprises a Web Services Description Language (WSDL) interface (Brown: see [0032], lines 1-7).

Referring to claim 25, Brown discloses the system of claim 24, wherein said mapping module creates the database tables based on the WSDL interface (Brown: see [0062]-[0063] and [0074]).

Referring to claim 26, Brown discloses the system of claim 22, wherein said mapping module creates meta data identifying a particular method of the remote service to be invoked when an operation is received on a given database table (Brown: see [0033], lines 9-12).

Referring to claim 27, Brown discloses the system of claim 22, wherein said mapping module maps arguments of a method [XML elements and attributes] to columns of a database table [column names] (Brown: see [0047]).

Referring to claim 28, Brown discloses the system of claim 22, wherein each database table created by the mapping module represents a method of the remote service [service external to the database] (Brown: see [0011], lines 1-4 and [0030], lines 1-4).

Referring to claim 29, Brown discloses the system of claim 22, wherein said mapping module creates an object [mapping file 37] encapsulating the mapping of a method of the remote service to a database table (Brown: see [0045]).

Referring to claim 30, Brown discloses the system of claim 22, further comprising: a mapping repository [database 29] for storing mappings between database tables and methods of the remote service (Brown: see Fig 3).

Referring to claim 31, Brown discloses the system of claim 30, wherein the conversion module consults the mapping repository for converting result values into database format (Brown: see [0075]-[0077], line 2).

Referring to claim 32, Brown discloses the system of claim 22, wherein the operation received on the database table comprises a JOIN operation and said conversion module joins result values obtained from invoking the method with data stored in the database (Brown: see [0105]).

Referring to claim 33, Brown discloses the system of claim 22, wherein said invocation module binds the data from the operation to a Simple Object Access Protocol (SOAP) call for invoking the method of the remote service (Brown: see [0029] and [0039])

Referring to claim 34, Brown discloses the system of claim 22, wherein said invocation module converts data from the database operation into Extensible Markup Language (XML) format (Brown: see [0014]; [0026]; and Fig 2).

Referring to claim 35, Brown discloses the system of claim 22, wherein said invocation module creates a Simple Object Access Protocol (SOAP) request for invoking the method of the remote service (Brown: see [0030], lines 1-4).

Referring to claim 36, Brown discloses the system of claim 35, wherein said communication module sends the SOAP request to the remote service

[service external to the database] (Brown: see [0011], lines 1-4 and [0030], lines 1-4).

Referring to claim 37, Brown discloses the system of claim 22, wherein said conversion module converts result values received in Simple Object Access Protocol (SOAP) format into database data types [mapping XML elements and attributes into SQL data types] (Brown: see [0047]).

Referring to claim 38, Brown discloses the system of claim 22, wherein said conversion module converts result values received in Extensible Markup Language (XML) format into database data types [mapping XML elements and attributes into SQL data types] (Brown: see [0047]).

Referring to claim 39, Brown discloses the system of claim 22, wherein said conversion module provides converted result values in response to the operation on the database table (Brown: see [0075]-[0077], line 2).

Referring to claim 40, Brown discloses in a database system, a method for performing database queries on data available from an application, the method comprising:

establishing communication between a database and an application having an interface (Brown: see [0026], lines 1-7 and [0032], lines 1-3);

creating database tables to represent at least some functions of the application based on the interface, each database table corresponding to a

function of the application [creating a virtual table representative if the web service] (Brown: see [0062]-[0063] and [0074]);

in response to a database query received on a database table corresponding to a function of the application, generating input arguments [input parameters] expected by the function based on the database query (Brown: see [0049]);

invoking the function with the input arguments and receiving results from invoking the function (Brown: see [0057]-[0059]);

converting the results into a database result set (Brown: see [0074]); and

returning the database result set in response to the database query [the statement returns a table containing the response from the supplier] (Brown: see [0075]-[0077], lines 1-2).

Referring to claim 41, Brown discloses the method of claim 40, wherein the application comprises a web service (Brown: see [0026], lines 1-7).

Referring to claim 42, Brown discloses the method of claim 40, wherein the application comprises a service available via a network [Internet] (Brown: see [0011], lines 5-6).

Referring to claim 43, Brown discloses the method of claim 40, wherein the interface comprises a Web Services Description Language (WSDL) interface (Brown: see [0011], lines 5-6).

Referring to claim 44, Brown discloses the method of claim 40, wherein said step of creating database tables includes creating meta data [i.e., business name] identifying a particular function to be invoked when an operation is received on a given database table (Brown: see [0033], lines 9-12).

Referring to claim 45, Brown discloses the method of claim 40, wherein said step of creating database tables includes mapping arguments of a given function [mapping arguments of the method which include XML elements and attributes] to columns [column names] of the corresponding database table (Brown: see [0047]).

Referring to claim 46, Brown discloses the method of claim 40, wherein said step of invoking the function includes binding data from the database query to a Simple Object Access Protocol (SOAP) call (Brown: see [0029] and [0039]).

Referring to claim 47, Brown discloses the method of claim 40, wherein said step of invoking the function includes converting data from the database query into Extensible Markup Language (XML) format [XML document] (Brown: see [0088], lines 12-15).

Referring to claim 48, Brown discloses the method of claim 40, wherein said step of invoking the function includes creating a Simple Object Access Protocol (SOAP) request for invoking the function (Brown: see [0030], lines 1-4).

Referring to claim 49, Brown discloses the method of claim 48, wherein said step of invoking the function includes transmitting the SOAP request to a

remote server [service external to the database] (Brown: see [0011], lines 1-4 and [0030], lines 1-4).

Referring to claim 50, Brown discloses the method of claim 40, wherein said step of invoking the function includes receiving results in Extensible Markup Language (XML) format (Brown: see [0014]; [0026]; and Fig 2).

Referring to claim 51, Brown discloses the method of claim 40, wherein said step of invoking the function includes receiving results in Simple Object Access Protocol (SOAP) format (Brown: see [0030], lines 1-4).

Referring to claim 52, Brown discloses the method of claim 40, wherein said step of converting the results includes converting results received in Simple Object Access Protocol (SOAP) format (Brown: see [0030], lines 1-4).

Referring to claim 53, Brown discloses the method of claim 40, wherein said step of converting the results includes converting results received in Extensible Markup Language (XML) format (Brown: see [0014]; [0026]; and Fig 2).

Referring to claim 54, Brown discloses a computer-readable medium having processor-executable instructions for performing the method of claim 40 (Brown: see [0023], lines 6-8 and [0024]).

Referring to claim 55, Brown discloses a downloadable set of processor-executable instructions for performing the method of claim 40 (Brown: see [0023], lines 6-8; [0024]; and [0025], lines 3-4).

Response to Arguments

10. Applicant's arguments with respect to claims 1-55 have been considered but are moot in view of the new ground(s) of rejection.

11. In regards to the 35 U.S.C. 101 rejections of claims 22-39, the amendment failed to overcome the rejection. The rejection has been rewritten to further clarify that the system is directed towards software per se.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

22 December 2006
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